

EXHIBIT 140

INDEPENDENT POLICY REPORT

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Prison Break

A New Approach to Public Cost and Safety

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A New Approach to Public Cost and Safety

By Simon Hakim and Erwin A. Blackstone

Executive Summary

Considerable debate continues among state officials, criminal justice experts, and the media about whether contract prisons provide sufficient savings and perform adequately to justify their use. This Independent Policy Report is designed to examine the evidence using publicly available state corrections cost data as the primary source.

How should analysts attempt to estimate the cost savings resulting from using contract prisons? We use economic models with state and some federal cost data to determine each state's avoidable costs, which are the overall costs the state no longer incurs when using private contractors. We then compare the avoidable costs against the per-diem charges of the private prison operator. In cases where the private operator manages a state prison, avoidable costs include short-run costs, which are those costs incurred as a result of the day-to-day operation of a correctional facility. In situations where overcrowding exists or the state correctional institutions require significant modernization or replacement, long-run costs, which are the short-run operating costs plus the capital costs associated with the financing, planning, and construction or rehabilitation of a facility, are appropriate. Our study considers all avoidable costs, including indirect costs such as underfunded pension and retiree health care costs, both of which are often ignored in other research in this area.

We analyzed individual states to understand the role of and issues associated with the use of contract prisons. We also conducted interviews with state

corrections officials and legislative oversight analysts were also conducted to provide an additional depth of understanding to this analysis.

There are three reasons for the use of contract prisons: (1) to generate cost savings and avoid large capital expenditures; (2) to relieve overcrowding, whether ordered by the court system or required because of threat of litigation perceived by departments of correction (DOCs); and (3) the sale of a state prison to private operators for budgetary reasons. (See Appendix 2 for a chart of appropriate costs to consider for each situation.)

In reference to the first reason for the use of contract prisons, cost savings and avoidance of large capital expenditures, statutory requirements in some states mandate savings of at least 5 to 10 percent in order to contract out to private operators. States, however, are inconsistent in how they measure these savings and often fail to include important avoidable costs. In particular, there is ambiguity in the categories states use for their calculations and the measurements of the state costs that should be considered for the savings required from the private operators. The states usually do not specify whether the short- or long-run costs are considered. Also, often, avoidable state prison costs are imposed on other agencies within DOCs and on other departments of state government. These costs are therefore not included in the state's calculations of cost per inmate per day. Clearly, these omissions establish artificially lower costs for state-run prisons. This report includes some of these often-omitted costs, provided that the sources are from state government and/or academic reports and articles.

The savings required of private prison contracts by statute are as follows: Florida (7 percent), Kentucky (10 percent), Mississippi (10 percent), Ohio (5 percent), and Texas (10 percent). The statutory requirements apply both to contractor-operated, state-owned prisons and facilities that are contractor-owned and operated. In cases like Florida and Mississippi, the contractor manages state-owned prisons. Thus, short-run avoidable costs are relevant. In Kentucky and Oklahoma, the inmates are transferred to privately owned prisons. Thus, long-run avoidable costs are relevant. Texas uses both types of contract prisons. Thus, short-run avoidable costs are relevant when state-owned prisons are used, and long-run costs are appropriate when private prisons are used.

The relief of overcrowding is the second major reason for the use of private prisons and includes both out-of-state transfer of inmates and in-state use of private facilities. In California, for example, the courts required a timely reduction of overcrowding, which led directly to the use of out-of-state contract prisons, as California does not allow private facilities to be built within its borders for state use. Other examined states that have experienced overcrowding are Arizona, Kentucky, Ohio, Oklahoma, Tennessee, and Texas.

Whenever overcrowding exists, the statutory savings requirement is less relevant since the overcrowding must be alleviated in a timely fashion for the security and well-being of both inmates and staff. California is a classic example of the cost encountered in not avoiding substantial overcrowding. Overcrowding requires that the long-run avoidable costs be compared against the contractor's price. The long-run consideration is also relevant when the state owns old prisons that need major renovations or prisons that are subject to demolition because of age or condition, or when the state faces difficulties in raising capital.

Finally, contracting out by selling a state prison to a private operator generates an immediate lump sum amount for state coffers. This occurred in Ohio, which sold the Lake Erie Correctional Institution to a private contractor to narrow a state budgetary deficit.

The following table provides both short- and long-run savings in the use of contract prisons. The long-run savings for Arizona's two prisons are 14.25

and 22.34 percent; California had 32.20 and 58.37 percent savings for two prisons; Florida's long-run savings was 17.67 percent; Kentucky's savings for its four prisons ranged between 12.46 and 23.50 percent; Ohio saved 20.28 and 26.81 percent in 2012 and 2010, respectively; Oklahoma saved between 16.71 and 36.77 percent on its four prisons; Tennessee had 17.32 percent savings; and Texas had 44.95 percent. Maine, which does not utilize contract prisons, could have saved 49.15 percent.

**Table 1: Avoidable Cost Savings
for Examined States**

States	Short-Run Avoidable Cost Savings (%)	Long-Run Avoidable Cost Savings (%)
Arizona	-1.00 & 8.01	14.25 & 22.34
California	29.43 & 57.09	32.20 & 58.37
Florida	7.00	17.67
Kentucky	9.43 to 20.88	12.46 to 23.50
Maine	47.40 (estimated)	49.15 (estimated)
Mississippi	8.69	25.27
Ohio	4.14 & 13.44	20.28 & 26.81
Oklahoma	-2.16 to 29.23	16.71 to 36.77
Tennessee	17.32	17.32
Texas	37.39	44.95

Performance at least equal to that of state prisons is required for private prison contractors. For example, contractors in Florida performed above the state level in training and educating inmates, which could be attributed to competition among contractors and the desire for contract renewal. Interviews with state DOC officials examined in this study reported that their contracts all mandate performance levels for private operators. Further, DOCs closely monitor adherence to these and other contract requirements. Additionally, private prisons are often required to meet the established standards of the American Correctional Association (ACA), which is the independent association of the corrections industry, and penalties can be and are frequently imposed for performance violations.

A major finding from the cost analysis and interviews with state leaders and stakeholders is that competition yields savings and better performance across the prison industry. The economics of industrial organization demonstrates the important benefits derived from the presence of even a small competitor in an otherwise monopolistic market. In this case, even though private contractors comprise less than 7 percent of the industry, they have generated substantial competitive benefits.

These benefits emanate from two sources. First, as more contractors compete, the prices are lower, and the performance is better. Likewise, when private prisons become an available option, efforts are made by public prison managers to lower costs, and demands by employees are constrained, since public employees realize that the legislature might favor private corrections as a more cost-effective option. Further, the greater the competition, the more managerial and technological innovations are introduced in both the public and private segments of the industry. Interestingly, the authors found that in several states where both public and private contract prisons operate, there was cooperation, mutual learning of new technologies, joint training, and adoption of efficient management practices.

Our study points to a possible moderate change that could be implemented to encourage even greater competition and thereby achieve more efficient delivery of existing corrections services, which is the model of managed competition. This model was originally initiated by Mayor Stephen Goldsmith of Indianapolis, Indiana, and encouraged public workers to participate in the bidding for their services, along with private competitors, to preserve their municipal jobs. Mayor Goldsmith initiated the “yellow pages” test where he enabled contracting out of all city services whenever several providers were listed. But, he went one step further and allowed city employees to compete. By so doing, public employees, as well as private contractors, had an incentive to search for managerial and technological innovations and offer their services at competitive prices.

Adopting managed competition also has implications for the current statutory savings requirements. Where they are required, state legislators have established

seemingly arbitrary levels of required savings of 5, 7, and 10 percent. It is not clear why the percentages differ or what the basis is for these numbers. The bidding by contractors often just approaches the statutory requirement and, indeed, high percentage savings may discourage some bidders and be counterproductive. It would be more effective to allow competition to determine the price. By instituting managed competition where the public sector competes on a level field with the private sector, the market determines the savings. In such a case, the complicated calculations of what cost items should be considered as avoidable costs and how to measure these costs becomes unnecessary. Managed competition has worked for many local public services, and there is no reason why it cannot be successfully implemented in the prison industry. Our suggested managed competition model is relevant for managing existing state prisons.

As can be seen from this study, public and private competition and cooperation in the provision of prison services has worked in terms of cost savings and performance measures. Indeed, public-private competition and cooperation could even be extended to further these fiscally responsible goals.

Introduction

Considerable debate continues among state officials, criminal justice experts, and the media about whether contract prisons provide sufficient savings and perform adequately to justify their use. This research is designed to examine the evidence using federal and state cost data and interviews with state officials as the primary sources. This study uses economic models to determine each state's avoidable cost, which is then compared against the per-diem charge of the private operator. When a contractor manages a state prison, avoidable cost includes only short-run costs. Long-run costs are appropriate when overcrowding exists, when a public prison is acquired and managed by a contractor, or when a contractor is required to pay for capital outlays.

This research considers all avoidable costs including indirect costs and frequently ignored underfunded pension and retiree healthcare costs, both of which are

often left out of research in this area. Individual states were analyzed to provide a more complete understanding of the role of and issues associated with use of private prisons. Interviews with state corrections officials and legislative oversight analysts were conducted to provide an additional depth of understanding to this analysis. Detailed calculations were provided and savings were determined using all of these data resources.

Statutory requirements in some states mandate savings of at least 5 to 10 percent compared to state costs in order to contract out to private operators. States, however, are inconsistent in how they measure these savings. In particular, there is ambiguity in the categories states use for their calculations and the measurements of the state costs that should be considered for the savings required from the private operators. When contractors manage an existing state prison, the short-term costs are relevant. When inmates are transferred to the contractor's prison while no other state prison cells are available, the long-term costs are appropriate.

Data published by government or provided by government leaders were used for this research, and the source for each item is provided in Appendix 1 to this report. The data were collected between 2012 and 2014. We believe that this exhaustive, multi-source examination on the costs of state prisons could help alleviate some of the ambiguity on this subject.

It is important to note that this research does not address any issues with relation to enforcement of laws or sentencing policy. For example, Benson (2003) argues that contracting out prisons could lead to decreased incarceration costs and, therefore, will encourage states and the court system to enact tougher sentencing policies and reduce early release for good behavior. These issues are not the focus of this work, which deals strictly with costs and performance of prisons. Further, anecdotally there was no observable data or information that supports this argument. To the contrary, states where contracting for correctional services is in place have and are pursuing a variety of alternatives to incarceration, including sentencing reform, community-based corrections, and reentry programs. It's also worth noting that private operators are partnering with government agencies to provide such services.

Sections 5 and 6 discuss the concept of avoidable cost and how it varies according to the reason for using contract prisons. These sections detail the avoidable direct, indirect, and miscellaneous cost items presented in Table Appendix 3.1, as well as the long-term avoidable cost, which includes the capital and financing costs for state prisons. When evaluating whether private prisons are socially beneficial, the analysis continues with nonmonetary variables like the flexibility provided by private prisons and the performance or outcomes of both public and private prisons. For this analysis, the authors also incorporated in qualitative terms some tax considerations, as well as the costs and service considerations of overcrowding. The study concludes with some recommendations to improve the productivity and cost savings in the prison industry that are based on economic theory and empirical findings in industrial organization.

1 | History of the Contract Prison Industry

Even prior to the founding of this country, corrections systems in the United States were operated by private entities. Until the late eighteenth century, long-term imprisonment was somewhat rare. The usual punishment was death by hanging, whipping, banishment, or branding, among other corporal and social punishments.

Counties appointed jailors, and those jailors earned income from charging inmates for their food and lodging, as well as charging the county for operating the jail. Sometimes the inmates were assigned to work in order to pay for their costs. Many of the inmates were held as debtors, and their work proceeds were also used to pay their debts. The jailor, who was often also the sheriff, operated in effect the first contract jail and enjoyed monopolistic power in each county (McCrie, 1993). In addition to rarely being used for long-term confinement, jails had no rehabilitation attributes.

This early "model" of the jailor is of an unregulated, local monopolist that invited corruption and abuse of power. The county provided the jailors that monopolistic power. This enabled the jailors to charge prisoners for the services they received while in jail. In

economic terms, the jailors charged inmates different prices according to their ability to pay. This is a classic case of a monopoly practicing price discrimination, which could maximize the profits of the jailors in the absence of government regulation of price or performance. Indeed, the jailors allowed rich inmates to enjoy greater privileges that poor inmates could not afford. Not surprisingly, abuse was common. There was no segregation by gender and age, the jails were highly overcrowded and unsanitary, and bribing the jailors was common. Escapes, too, were frequent (Shichor, 1995, p. 25).

All through the nineteenth century, incarceration periods were extended for both deterrence and retribution reasons. Further, prisons were eventually perceived as profit units and even owned their own farms. For example, the Huntsville, TX, prison operated its own cotton mill beginning in 1854. Prisoners were expected to generate a profit for the institution, at least covering their own way (McCrie, 1993).

In 1790, the first penitentiary was opened on Walnut Street in Philadelphia. It was originally built as a city jail in 1773 to alleviate overcrowding in the existing facility where criminals were held for short periods. The original building was U-shaped with large rooms holding groups of inmates. The Quakers of Philadelphia, however, developed the new concept of a penitentiary where rehabilitation of criminals became the goal. In the courtyard of the original complex, small cells with high windows were introduced. These were built to hold individual inmates so that no eye contact with other prisoners or the outside world was possible. The goal was for inmates to reflect and be remorseful about their crimes. The Quakers also believed that solitary confinement for the entire prison term would yield rehabilitation. For this reason, inmates were not allowed to work because it was believed labor helped them avoid quiet reflection about their deeds.

The Quaker concept of the penitentiary spread to other locations in Pennsylvania including Pittsburgh and the Eastern State Penitentiary (Cherry Hill) in eastern Philadelphia in 1821, as well as to New Jersey's Trenton State Prison that same year. Based on Quaker teachings, inmates were kept in solitary confinement, which led to severe psychological problems and even

suicides. Later, inmates were required to work, mainly in textiles, in an effort to transform criminal behavior. Inmates were compensated for their work, out of which they paid for their upkeep and were allowed to keep the rest (McCrie, 1993, p. 24; Shichor, 1995, p. 27). The Quaker approach to inmates added for the first time the "correctional" or rehabilitative aspect to incarceration.

The penitentiary concept, including the work requirement, also spread to the state of New York. In 1797, the Newgate penitentiary was created in New York City where inmates were paid for their work and were still required to pay for their upkeep. The intent was not only to reform the inmates but also to help defray the operational costs of the prison. An interesting innovation initiated in Newgate was that inmates were provided a share of the profits upon their release as a reward for good behavior.

In 1819, a third penitentiary was opened in Auburn, NY, where the solitude system was maintained, but inmates worked and ate together. Both the New York prisons contracted out prison labor to companies, and their work was conducted either within the prison or elsewhere. This contracting out of prisoners was quite profitable to the state. With the Walnut Street Philadelphia prison and the two New York facilities, state government for the first time took over the operation of prisons.

The year 1825 ushered in a new era in the management of corrections. At that time the Frankfort prison in Kentucky was incurring losses even though inmates were leased to businesses for in-prison production. A local businessman offered to operate the prison and use the inmates for work. He was offered a five-year contract in exchange for annual payment of \$1,000. He found the prison to have insufficient security, so the businessman built a new 250-cell prison and paid the state the required \$1,000 yearly resulting in the country's first contract prison. The arrangement was similar to the current Build-Operate-Transfer (BOT) model where the private sector builds the prison, operates it, and after a period of time, transfers the ownership to the state. However, in the Frankfort case, there was no clear transfer of ownership to the state. The BOT concept will be discussed further at the end of this section.

Since 1825, essentially all states relied on convict labor and some states even contracted out entire prisons. Following the Kentucky example, Alabama contracted out the management of an existing prison in 1846, and Louisiana also leased a prison for five years for \$50,000 annually. Leasing of inmates to the private sector lasted until the end of the nineteenth century, and the contract prisons of this era ceased to exist in the beginning of the twentieth century (Shichor, 1995: 34–42).

The challenges with privatized prisons and public prisons at the turn of the twentieth century included abuse of leased inmates by both the private employers and the prison guards, lack of sufficient healthcare and food, and overwork. There were several reasons for these problematic conditions and outcomes. First, there was insufficient legal protection for inmates and news media provided little exposure to the injustice and abuse. There was also no organized oversight of prisons or the prison industry and no national standards of best practice. A key element for the lack of power held by inmates and the abuse by employers and guards was their absolute monopolistic power. Prisoner labor was the primary motivation for contract prisons. Not uncommonly, prison contracts were awarded with no apparent competition for contracts or expertise in recommended correctional practice (Shichor, 1995: 41–42).

Prisoner abuse and the growing recognition of the importance of rehabilitation led state governments in the early twentieth century to reassert control of the prisons. However, even though private prisons no longer existed, private contracting of inmate labor continued. By 1940, contracting out prisoner labor finally ended (Jing, 2010, p. 13). However, today, state facilities still use prison labor to produce goods and services for the prison and to work on state projects like removing litter from highways or building chairs for use by the state government.

Between the early 1940s and the early 1980s, state government monopolies replaced the private monopolistic prison operators. The states' departments of correction (DOCs) managed and operated their prisons, while some specific ancillary services like food, medical, and education were contracted out, much under competitive bidding.

The 1980s saw increases in state budgets for corrections and other state services that led constituents to revolt against increased taxes. At the same time, more drug-related activities were labeled crimes, and users of drugs were sent to prisons with sentence lengths previously unseen for these types of offenses. Interestingly, in this period, a new form of prison industry was suggested and partially implemented. Former Chief Justice Warren Berger advocated for “replacing warehouses with factories within fences,” a rehabilitation method of getting inmates to normal work habits and skills. The intention was also for inmates to support their families and possibly help compensate their victims (Berger, 1992). Although incarceration increased, voters declined in referendums to fund new prisons. This led to a lack of sufficient prison construction and bed capacity throughout the United States. Limited capacity then led to prison overcrowding with no obvious solution available to governments. This situation created an opportunity for private participation in corrections. At the federal level, private contractors were used to hold illegal immigrants beginning in 1979. In 1984, Corrections Corporation of America (CCA) was formed and received a contract to operate a prison in Hamilton County, TN. This was the first entirely privately managed adult correctional facility in the modern sense. In 1985, CCA began operating the Bay County Florida jail and, in January 1986, U.S. Corrections Corporation began operating a prison in St. Mary's, KY. By 1989, some forty-four adult correctional facilities were managed by prison companies for all three levels of government, housing about 15,000 inmates (Abt Associates, 1998, p. 6).

In terms of construction, private companies have been building prisons for many years under government design and supervision. However, during the 1980s, private companies' role increased to include the selection of the sites, material, architectural design, and even financing (Brakel, 1992, p. 254–255).

This new trend of privatization differs significantly from the early privatization model that existed from 1825 through the end of the nineteenth century. In the twenty-first-century model, as will be discussed in Section 13, greater competition exists among

correctional companies, contracts are bid competitively, and there is significantly greater oversight by state agencies, accreditation agencies, and liability insurers. Existing transparent competition prohibits abuse that was common in the early monopolistic markets.

Additionally, there is more involvement and exposure to the media, greater public concern for inmate rights, and better cooperation between the public and private sectors. The early model allowed for private monopolies of both the prison and the employing companies, which led to the undesired abuse and exploitation of inmates. Later, mostly in the twentieth century, public prisons created another monopoly that created inefficiency in prison operation and monopolistic power for public employees. The latest model that started in the 1980s is characterized as competitive among the private contractors with added public competition in the relevant states with government oversight.

Currently, the common partnership models used are Build-Operate-Transfer (BOT) (Mississippi); Build-Transfer-Operate (BTO) of a new prison (Florida) or contract out or manage an existing prison (Kentucky); sale of a public prison (Ohio); and contracting-out inmates or “pay for use” to private facilities (California, Oklahoma). BOT is where the private company builds a prison and operates it, and at the end of a specified period that usually allows the company to recover its capital outlays, the facility is transferred to the state ownership. Under BTO the private company transfers ownership of the facility immediately to the state and in turn is paid for operating the prison, including the annualized returns on its investment. The basic difference between these two methods of public-private partnership is that in BOT the facility is private with all attendant liabilities, while in BTO the facility is public and enjoys sovereign immunity.

The number of state prisoners in privately operated facilities was 71,845 in 2000, increasing to 95,249 in 2009. However, the share of state prisoners in private facilities increased just slightly from 5.87 percent in 2000 to 6.87 percent in 2009 (Gilroy, 2011). In 2012, almost 7 percent of state inmates were housed in privately owned or managed facilities.

2 | Previous Studies on Cost and Performance of Public and Contract Prisons

There is much writing in both the popular and professional literature on the perceived merits and disadvantages of contract prisons. Many of these references are based on hypothetical or ideological grounds. On one hand, proponents of privatization stress the merits of competition and its effects on both increased efficiency in the production and quality of services rendered and in enhancing innovations. Indeed, this hypothesis has been supported in the analysis of many other industries. On the other hand, opponents of privatization base their claims on the public good aspect of correctional services where they hypothesize that the profit motives of the producers are not aligned with social welfare. For example, opponents of privatization have claimed that profit incentive leads to cutting the quantity and quality of food.

Economists generally support the benefits of competition. The question is whether such benefits are also evident in the private prison industry. A second question is, what elements in competition lead to efficiency and innovations in the private prison industry? We do not intend to judge such arguments but rather objectively observe the evidence while maintaining an academic and neutral approach. In this section we present research by scholars on costs and performance of public versus private prisons. We start with key articles that analyze the principles of evaluating costs and performance of prisons, followed by case studies of cost and performance, and ending with meta-analysis and other studies that include aggregated data.

Brakel and Gaylord (2003) evaluated the evidence on comparative costs of public and private prisons. They conclude that private prisons provide substantial and sustainable cost savings. Their conclusion was based on almost three decades of U.S. experiences with privatization. They break down cost comparisons into the categories of (1) construction (renovation), (2) management, and (3) financing of construction. They report that private firms typically achieve construction cost savings of 15 to 25 percent.

(A similar finding was reached by Thomas (2003)). They also build facilities faster than public entities. In part, private companies are able to build cheaper because of design and site differences. In terms of operating costs, Brakel and Gaylord conclude that private operation provides savings in the 10 to 15 percent range (see also Moore, 1999, and Thomas, 2003). The savings emanate from such factors as more efficient use of staff, lower pension costs, and purchasing efficiencies. Brakel and Gaylord also note some savings in terms of financing of facility construction. They conclude that the cost savings do not arise from cutting the quality of the private prisons. The authors also discuss other issues such as the morality and legality of private or contract prisons. In particular, they note that courts have clearly ruled that government can delegate its correctional responsibilities to private firms. As to the morality issue, the authors note that inmates themselves are less concerned with whether the institution is public or private but rather how fairly and lawfully they were being treated. Brakel and Gaylord also consider the important role of contracts and their provisions in terms of obtaining good contractor performance. They discuss the use of contracts to obtain desired performance but warn of excessive specification, which could reduce flexibility and hamper cost savings and innovation.

Gaes et al. (2004) also provide an analysis of public versus private prisons, concluding that most studies have significant defects, preventing definitive conclusion about relative costs. Much of the work is devoted to discussion of problems in the comparison of public versus private prison costs. The authors point out the importance of using avoidable cost for an appropriate comparison. They also note the necessity of considering unfunded liabilities such as pensions, as well as overhead costs in the avoidable cost. Gaes et al. indicate that the smaller the private portion of prison operations in a jurisdiction, the smaller the share of overhead costs that will tend to be avoided. Indication of their concern with the state of cost comparisons is the following statement: "Our sense is that a meta-analysis is premature until we have settled on a coherent method of measuring

the relative costs of publicly and privately managed institutions" (Gaes et al., 2004, p. 104). They also question whether any savings in prison labor costs come at the expense of quality of the service and whether privatization and competition will improve performance. Finally, they raise questions about measuring recidivism since offenders have different life-course criminal trajectories before prison, suggesting the great difficulty of using measures of recidivism in evaluating prison performance.

The U.S. Government Accounting Office (US GAO) (1996) reviewed five studies done by or for various states since 1991. The studies by California, Tennessee, and Washington found little or no evidence of operational cost difference between similar public and private correctional facilities. Texas reported operation cost savings of between 14 and 15 percent, but the GAO noted that the Texas comparison involved a hypothetical public facility and was based on various assumptions whose alteration could affect the comparison. The GAO concluded that the evidence that private facilities had lower operational costs was not proven. In terms of quality, the GAO focused on studies by New Mexico and Tennessee, which examined issues of quality in great detail. Using structured data collection instruments to assess such issues as security and safety, healthcare, management, personnel, and inmate programs and activities, New Mexico yielded equivocal results, and Tennessee reported no difference in quality. Finally, the GAO noted in any event the comparative performance is subject to change over time for many reasons including competition between public and private facilities. Accordingly, studies based on multiyear data are preferable to those based on only one or two years.

Logan and McGriff (1989) were the first to calculate the costs for private versus public prisons. They compared the price paid to CCA for managing the 350-bed minimum-medium security Hamilton County Penal farm near Chattanooga, TN, to the county's total costs if it would have maintained the operation of the prison. Contracting out prison management generated annual savings of at least 4 to 8 percent, and more likely in the range of 5 to 15

percent, compared with direct county management. Logan and McGriff's innovation was the inclusion of "hidden costs" that do not appear in the correction budget but do apply mostly to other agencies or are unidentified in the general fund. These omitted costs from the public correctional budgets amount to one-third of the included funds and include the categories of capital, finance, taxes and rent foregone, unemployment and workers' compensation, external administration, external oversight, legal services, general liabilities, property insurance, training of staff, transportation services, food provided by other agencies, interagency personnel, and healthcare and education provided by other agencies. The authors quoted a 1985 survey of state correctional officials, which concluded that these hidden costs could add up to 13.5 percent of total operating costs. Based on these survey data from these 42 states, Logan and McGriff concluded that real incarceration costs were 20 to 35 percent higher than the DOC's report.

Nelson (2005) analyzed the costs of a Taft, CA, federal contract prison with the cost of in-house operation of three similar government-operated facilities for the first five years of the Taft contract. Her findings suggest that the costs of routine contract operations were very similar to government costs. Over the first two years of full-scale operations, the observed cost of the contract prison was lower than the in-house avoidable costs and higher for the last two years. When the costs for all five years were estimated, the contract prison saved \$4 million or 2.6 percent over the government facility. Nelson also suggested that when a prison is contracted out, savings could potentially be achieved in government centralized support, facility activation, and ongoing competition among service suppliers to the prison. In her report, she provided an extensive list of avoidable costs to be considered in the calculation of public costs.

Up to this point, we have concentrated mainly on cost to government compared with prices of contracted prisons based largely on case studies. Now, we turn to performance and cost comparisons using larger databases.

Logan (1992) in a later study analyzed the performance of three women's state, federal, and private

prisons in New Mexico. He used an index developed by the Federal Bureau of Prisons, which is based on eight dimensions of prison performance aggregating a total of 333 measures of quality. The private prison outperformed to a quite substantial extent both the state and the federal prisons in six out of eight dimensions including security, safety, order, activity, and management. The state prison modestly outscored the private prison in the dimension of care, while the private and the federal prisons achieved equal scores in the dimension of justice. Logan concluded that the state of New Mexico benefited by privately contracting its women's prison in both the quality of the operation and lowering the costs. Logan suggests that the high performance of the private prison emanates from better facility design, flexibility in operation, decentralization, higher morale and a sense of ownership among line staff, greater experience of top leaders, and strict rules of inmate governance.

Logan (1996) compared a privately managed New Mexico women's prison against its previous operation as a state facility. The study sought to determine whether and to what extent private and public management contributed to differences in staff satisfaction, among other aspects. In the comparison of the prison under public and private management, the inmate populations were essentially unchanged, substantial continuity in staff existed, both prisons were trying for American Correctional Association accreditation, and both teams were operating under the same court decree. Logan thus attributed any differences to management. He looked at job satisfaction, stress and burnout, staff and management relations, staff experience, and salary and overtime. Interestingly, he surveyed the twenty-two staff members who worked under both public and private management. Logan considered institutional records, surveys of staff working under private or public management, and as mentioned, surveys of those who worked under both. He found high scores for the private operation on a majority of the dimensions. He concluded that private management operated a better designed facility and had greater flexibility and a decentralized style, good

communication, more performance-based management, higher morale, more experienced management, a greater sense of ownership among staff, and a more formalized pattern of inmate control.

Lanza-Kaduce et al. (1999) reviewed extensive literature on costs and performance of private and state prisons. They noted: "The general conclusion is that privatized correctional facilities are achieving economies and are doing so without compromising the caliber of correctional services." The crucial issue related to performance of public and private prisons is what reduces recidivism. Contracts with private firms, whether limited to specific functions or full-scale management of a prison, can assure the quantity of inputs like number of hours devoted to education programs but not the outputs like the quality of education inmates gained. Several measured outputs of correctional services eventually collapse into the extent of recidivism of inmates. Thus, according to this study, recidivism is the single most important output that should be compared in the evaluation of public and private prisons. Lanza-Kaduce et al. (1999) compared a group of inmates released from privately operated prisons in Florida with that of a matched group released from state-operated facilities. The inmates were matched on factors that earlier research had shown to be associated with recidivism—type of offense, age, gender, race, security classification, and prior record. The conclusion of the researchers was that: "Private prison releases were more successful than were their public prison matches." This finding reflects substantive differences between public and private operations in Florida. Specifically, statutory and contractual requirements for private firms involved programs that are designed to reduce recidivism. The authors conclude that the internal culture and leadership at private facilities work to coordinate programming with other institutional demands, creating changed attitudes and behavior that are crucial to reducing recidivism. This is in contrast to the idea of "warehousing" inmates.

Camp and Gaes (2002) report findings from a 1999 Federal Bureau of Prisons (BOP) survey of private and federal prisons intended to evaluate

dimensions of quality under both confinement systems. They note that private prisons tended to house fewer maximum-security inmates who are more costly and contribute to a disproportionate number of problems in correctional institutions. Unless care is taken in the interpretation of the information, data on inmate and guard victimization would tend to be biased in favor of contract prisons. The authors found that private prisons had high separation rates for employees, meaning that BOP prisons had staff that worked at the facility much longer than staff at contract prisons. About half of the contract prisons had to replace 50 percent of their staff during the same period that BOP had to replace at most 9 percent of its staff. The implication is that more experienced staff would provide more effective service and control. The authors further note that private prisons had higher custody staff-to-inmate ratios than BOP prisons. In terms of drug misconduct, a key indication of overall security control, the authors report that 20 percent of private prisons had a rate of 10 percent or more while only one BOP prison had a rate as high as 6 percent. The rate of 6 percent is for low- or medium-security prisons, which are comparable to the contract prisons. Homicide rates of inmates were about the same, and the results of the assault rate on inmates were ambiguous. The authors conclude that while many private prisons had security problems, some private prisons were operating effectively.

Camp and Daggett (2005) compared the performance of one private prison with three federal prisons for all misconduct, and specifically for violent behavior and drug use. They used data on all federal prisons for thirty-six months from January 1999 through December 2001 to form a general quantitative model to explain prisoner misconduct. The explanatory variables included the demographics of inmates and their criminal history, prison staff, and institutional characteristics. Then, they applied the estimated model to the four prisons in order to determine whether differences occur between the public and the private prisons. Overall, the private prison did not perform as well as the three public prisons. However, the private prison's performance was exemplary on violent misconduct and security-related misconduct

issues. For the other forms of misconduct, as captured by an overall category of misconduct, the performance of the public sector was better.

It is common to conduct meta-analyses when many studies are available on the same subject matter and where similar variables are included in these studies. We identified such studies that directly compared private and public-managed prisons. The most recent such academic article was published by Lundahl et al. (2009), who empirically analyzed twelve studies on cost savings and confinement quality. They compared matching public and private prisons on the dimensions of cost and quality of confinement. The cost measure was per-inmate per-diem savings. Quality of confinement included, among other dimensions, security, safety, order, care, justice, and management. Studies included in the meta-analysis were deemed to be high quality. Fifty percent of the eight studies with cost confinement data showed that private prisons were lower cost with a range between 4.6 percent and 15.2 percent. In 25 percent of the studies, public prisons were less costly (10.0 and 14.2 percent). Overall, private prisons were 2.2 percent less costly. In terms of quality, the results were not clear. Of the quality indicators, 47 percent favored privately managed prisons and 44 percent favored the public prisons. The overall conclusion was that 50 percent were in favor of public and 30 percent for private. The authors state that "our conclusion is that privatization provides neither a clear advantage, nor disadvantage compared with publicly managed prisons." (Lundahl et al., 2009: 392).

Pratt and Maahs (1999) analyzed thirty-three cost studies and found that on average, private prisons had lower cost by \$2.45 per inmate per day. The best predictors of costs were the age of the facility, the level of security, and the number of inmates served. When these factors are explicitly introduced, private prison costs are modestly lower; however, shifting to private management will "not alleviate much of the financial burden on state correctional budgets."

In a follow-up study, Perrone and Pratt (2003) again analyzed the cost-effectiveness of private versus public prisons and added the matter of quality of confinement. The researchers, using nine stud-

ies, compared seven categories or domains for the quality of confinement. In each such study, a private prison was compared with a similar public prison. The results were inconclusive. Private prisons appear to be less expensive than public prisons by \$3.40 per inmate per day. However, the researchers qualified their finding by suggesting poor matching techniques and not-accounted-for differences in factors like security level, maximum capacity, and the number of programs the facility provided could help explain the differences. As for the quality of confinement the results were also inconclusive. "In the domain of safety, private prisons performed equally as well or worse, whereas they performed equally as well or better in the order and care domains."

Blumstein, Cohen, and Seth (2007, 2008) investigated the effects that the presence of private prisons in a state has on the costs of public prisons and the rate of growth in spending for prisoners in public prisons. Using all the states' data over the six-year period 1999 through 2004, the study concluded that the rate of growth of housing costs for public-prison inmates was lower by approximately 2.64 to 3.125 percent per year in states where some of its prisoners were also housed in privately managed prisons. An average state's DOC without private prisons could have saved on its own state-operated prisons between \$13 million and \$15 million on total operating spending of \$493 million, or approximately 2.8 percent. These savings are in addition to any savings that the private prisons themselves could provide. These savings on the state's own operating prisons have a lag of two years, which may result from a lag between the time state prison officials feel the effects of the competition and the time they can implement changes. An alternative explanation provided is that the learning takes two years. Blumstein et al. suggest that a comprehensive social cost-benefit analysis be conducted on private versus public prisons. As often stated, a major benefitor performance variable that must be explicitly considered is the recidivism rates in both prison systems. The authors point out various studies that showed significant evidence for lower costs and better performance of private prisons.

Table 2.1. Summary of Prison Studies

	Author	Type of Analysis	Data Examined	Cost Comparison	Performance Comparison	Conclusions
1	Brakel & Gaylord, 2003	Review and analysis of studies comparing costs, performance, legal, and moral issues	No original data analysis	Private saved on: construction 15–25%; operations 10–15%. Private built faster.	None	Contracts with private operators should allow flexibility.
2	Gaes et al. 2004	Review and analysis of studies on costs and performance; emphasizing methodology used	No original data analysis	Emphasized importance of including overheads and unfunded pensions.	Unsure whether lower labor costs of private prisons lead to differences in performance. Recidivism measurement is unreliable due to differences in backgrounds of inmates.	Uncertain whether case studies and meta studies yield valid findings due to incorrect measurement of costs and performance.
3	U.S. GAO, 1996	Review of five studies since 1991	No data analysis	No evidence for lower operating costs of private facilities.	Equivocal results. Performance analysis requires multiyear data analysis.	No significant differences for costs or performance found.
4	Logan & McGriff, 1989	Case study of contract price versus the county's total costs	Detailed cost estimates for county including hidden costs to other government agencies	Contracting out saved at least 4 to 8% and likely 5 to 15%.	The contract assured at least equal performance.	Private management yields significant savings.
5	Logan, 1992	Quality comparison of two public and one private women's prisons	Records and surveys of staff and inmates for federal, state, and private prisons	Not applicable	Private prison out-performed the two public prisons by substantial margins across all eight dimensions of quality.	Private prison was better managed.
6	Logan, 1996	Staff satisfaction under private prison that was previously publicly managed	Performance measures derived from staff surveys and institutional records	Not relevant	Privately operated prison scored higher on majority of quantifiable comparisons.	Private prison preferred on performance.
7	Nelson, 2005	Cost comparison of a private prison and three federal prisons	Operational costs emphasizing avoidable costs over a five-year period	Private prison less expensive by \$4 M or 2.6%.	Not applicable	Modest private prison savings.
8	Lanza-Kaduce et al., 1999	Performance comparison of recidivism rates of releases	198 male inmates released from two private prisons in Florida were matched with public releases	Not applicable	Private prison group had lower rates of recidivism using various measured alternatives. Reoffenders committed less serious crimes.	Statutory and contractual requirements for private firms in Florida include programs specifically designed to reduce recidivism.

	Author	Type of Analysis	Data Examined	Cost Comparison	Performance Comparison	Conclusions
9	Camp & Gaes, 2002	Security and performance of private prisons	Survey of 91 of the 103 private prisons operating in the United States	Not applicable	Problems in maintaining security procedures; unstable workforce in private prisons and less costly workers have not produced acceptable level of safety and inmate care. Drug misconduct higher in private than public federal prisons.	Private operators need to attract and retain qualified workers.
10	Camp & Daggett, 2005	Performance comparison of all misconduct and specifically violent and drug misconduct	Survey of all BOP prisons and one low-security contract prison, 1/1999-12/2001	Not applicable	Private prison performed in low range for low security prisons.	Private prison exemplary only for violent and security-related misconduct; less favorable for all other and drug misconduct.
11	Lundahl et al., 2009	Meta-analysis on cost and performance	Based on twelve studies of matched public and private prisons	Private prisons saved 2.2%.	Mixed results	No clear differences.
12	Pratt & Maahs, 1999	Meta-analysis on cost	Based on thirty-three studies	Cost per inmate per day lower in private by \$2.45. Best predictors were facility age, size, and security level.	Not applicable	Management type less important to explain cost than the three predictors.
13	Perrone & Pratt, 2003	Meta-analysis on cost and performance	Based on nine studies matched for quality of confinement	Cost per inmate per day lower in private by \$3.40.	Qualities of confinement results were inconclusive.	Overall results were inconclusive.
14	Blumstein et al., 2007, 2008	Impact of private prisons on state prison cost and growth	All state data over six years (1999–2004)	Public prison cost lower by 2.8% or \$13M–\$15M if private prisons operate in the state.	Not applicable	Additional benefits of competition arise from private prisons operation.

Our review of the literature shows the importance of considering all avoidable costs, including, among others, costs to other government agencies besides DOCs and costs that are incurred but not paid immediately such as unfunded pensions and retiree costs. Further, the review suggests the difficulties in how to correctly compare costs of public versus private operation, guiding the design and data search for this current effort. Finally, performance measures analyzing recidivism are critical but their study is fraught with great difficulty.

3 | The Structure of the Contract Prison Industry

In this section, we analyze the market definition of the prison industry, the factors that determine the extent of competition, and the resulting inferences. We incorporated here six factors that are relevant for the prison industry. This analysis helps determine whether and how to further improve performance within the prison industry and, ultimately, whether and how social welfare could improve as a result. We analyze both the narrowly defined private prison industry and the industry as a whole, which also includes state prisons and county jails.

Concentration: As mentioned in Section 2, adult contract corrections in the modern sense began in 1984 when the then-new Corrections Corporation of America (CCA) obtained a contract to manage a prison in Hamilton County, TN. States soon followed in employing private contractors. Other early private prison entrants into the market included Management Training Corporation (MTC) and U.S. Corrections Corporation. The entry of these companies into the prison industry ended a state monopoly of corrections. By 1994, twenty companies were competing to provide adult correctional services (Culp, 2011). The number of firms has declined since the 1994 peak. At the end of December 1998, there were fourteen firms in the adult corrections segment, which is the focus of this study. In 2007, the number of competitors declined to six.

Economists often measure the extent of substitution (i.e., cross-price elasticity) between goods and

services, namely whether and the degree at which a change in the price of one good affects the demand for another good. The more buyers perceive two products as substitutes for one another, the more an increase in one product's price will cause a greater increase in the demand for the other product. In our case, if public and private prisons are perceived as close substitutes, then the existence and the price charged by private prisons could constrain the cost of public prisons. Managers and workers of public prisons become more efficient and restrain cost and wages out of fear of being displaced by contract prisons. The question is how to define the relevant substitute products or services. It is intuitively clear that if a state allows either or both private prisons within its jurisdiction or sending inmates out-of-state then they are substitutes. Namely, a significant difference in favor of the price of housing an inmate per day in private prison against the same cost in the public prison may prompt state legislators to favor private prisons and thus force public managers and workers to become more efficient and avoid demands for improved working conditions and salaries. In other words, contract prisons reduce the monopolistic status of state prisons, and introduce competition in the industry. The definition of the relevant market for prisons is pertinent to determine whether, for example, a federally contracted private prison can have such an effect on state prisons' costs.

The relevant market definition of adult corrections includes state and private facilities, which are close substitutes. In some cases, county jails, as in California and Texas, could also be considered substitutes since state prisoners are sometimes placed there as well. Accordingly, the market share of inmates confined in contract prisons is nationally less than 7 percent. More relevant, however, the share of private adult corrections in individual states ranges between 0 and 44 percent (U.S. BJS, 2011, Appendix Table 20). Again, the appropriate market definition includes all good substitutes, which are or could be legally permissible. In at least thirty states, the use of private prisons is allowed so that substitution exists in those states.

A factor normally considered in market analysis is concentration, which for the purposes of this research is the number and share of private firms operating within

the total corrections industry. We used a four-firm concentration ratio and the Herfindahl-Hirschman Index (HHI) as the two indicators of concentration for the industry. The four-firm ratio is calculated as the sum of the market shares of the largest four private companies in the industry. The HHI is the sum of the individual firms' percentages of market shares squared with a maximum value for a monopoly of 10,000, while less than 1,500 is considered un-concentrated or competitive.

In the existing private segment, both indicators suggest high concentration. We find that the four-firm concentration ratio in the adult private corrections segment of the market at the end of December 1998 was 90.1, which means that the top four firms accounted for 90.1 percent of the U.S. private capacity. The HHI was 3,753, which can be interpreted to mean that in 1998 the industry was one with an equivalent of 2.7 equal-size firms. The data used for these calculations were obtained from the U.S. Bureau of Justice Statistics (U.S. BJS) (2001: 4).

Concentration in 2007 was not far different from 1998. The four-firm concentration ratio in that year was 93, which means that the top four firms accounted for 93 percent of the private adult capacity (Avondale Partners, LLC, 2009, p. 1). The HHI was 3,297, which means that the private industry segment had the equivalent of 3.03 equal-size firms.

High concentration has been criticized because it is often thought to contribute to noncompetitive behavior (Culp, 2011). However, economists, including one of the authors of this research, have pointed out that economic theory and behavior, including that of actual duopolies, suggest that high concentration by itself is insufficient to conclude that noncompetitive behavior is probable (Blackstone et al., 2011–2012). Indeed, the soft drink and mainframe aircraft industries, among others, illustrate that high concentration and competitive behavior are quite possible.

Further, even in 2012, contractor-operated prisons comprised less than 7 percent of adult corrections. In other words, as mentioned, a good substitute, mainly state prisons, already exists. Moreover, states could and do send prisoners to other states. Private contract prisons face many alternatives so that con-

centration within the contract portion of the industry does not indicate any real monopolistic control of the market. Again, the market is actually all corrections facilities, and the private portion is small.

Entry: There are modest legal and financial barriers for new firms to enter the management of existing prison facilities. Licenses are not required for entry. Modest requirements exist for liability insurance, and experienced firms have some advantage in the choice of a contractor. Entry into the construction and management of prisons, however, requires significant financial commitments and involves considerable risk if a significant number of cells is not occupied. (For a detailed discussion on the lower risk for managing a prison see Tang, 2012). In the early 1980s, there was rapid entry of at least twenty firms into the burgeoning private corrections industry. Further, between 1996 and 2011, three additional small, regional firms (LaSalle Southwest Corrections, Louisiana Corrections Services (LCS), and Emerald Companies) were formed, suggesting that entry remained possible. Overall, large firms can more easily enter and build entirely new prisons. Nevertheless, LCS, a small entrant, has built a new facility, although it did so in stages. LCS started at about 200 beds and eventually reached a facility size of about 1,000 beds.

Economies of scale: The industry has some economies of scale both at the individual correctional facility level and at the firm level. The facility level includes the capital and operational outlays of the prison, while the firm level refers to any additional savings from operating more than one prison. Here we deal solely with the operation of one prison. A minimum efficient size (MES) prison, which is the smallest size facility to reach a baseline level of cost efficiency, has a capacity of about a 1,000 beds. At 750 beds, a facility's cost per bed will be about 15 percent higher. An indication that a 1,000-bed facility is the approximate MES is that a cost-minimizing or profit-maximizing firm would presumably build an efficient size facility. Indeed, the 2008 phase II construction of LCS's Pine Prairie Correctional Center had a bed capacity of 1,008, and its South Louisiana Correctional Center, which was completed in 2001,

had 1,002 beds. The 1,000-bed threshold exists because up to this size, inmates can be added without adding much additional staff. Because labor comprises 70 percent of operating costs, such a threshold exists. Small states could thus have only a few efficient-size facilities because of their smaller populations. This is especially likely because prisons normally are operated at one level of custody (for example, minimum or maximum security).

Additional economies of scale are available at the firm level. Operating several facilities yields buying economies. This could be important for inputs like food or liability insurance. Moreover, a large firm may have advantages in terms of workers. For example, if a warden has to be temporarily unavailable, a large firm can move a deputy warden who is already familiar with the system operation from another facility.

Sensitivity to prices (price elasticity): Private firms face a highly elastic demand for their services. The reason is that states that consider using contract prisons, especially out-of-state transfers, have many close alternative providers including county jails and other states' prisons. Further, the private share of total prison capacity is about 7 percent, so price reduction (or service quality improvement) could potentially enable private contractors to successfully compete with the public sector for a much larger share of the market. Existing government policies often prevent such entry. However, a threat of entry will force the operators of existing public prisons to become more efficient and for the state DOC to loosen bureaucratic procedures preventing cost reductions.

Mergers: Mergers have played an important part in the growth of private corrections companies. For example, CCA acquired U.S. Corrections Corporation, the then-third largest company in the private contractor portion of the industry in 1998. U.S. Corrections owned five facilities with a bed capacity of 5,275 and managed other facilities with a combined 5,743 beds (Culp, 2011). In 2005, GEO Group acquired Correctional Services Corporation, the seventh largest company in the industry, and, in 2010, it acquired Cornell Companies, the fifth largest. Community Education Centers was a privately held company providing community based reentry

services and rehabilitation services for offenders mainly in New Jersey and Pennsylvania. In 2007, it acquired CiviGenics and, as such, became a participant in adult corrections. Other firms in vertical- or horizontal-related industries are potential entrants to the contract adult prison segment.

Buying power: The states have considerable power in the purchasing of prison services from private corrections contractors. Obviously, the overall demand versus supply of prison beds is a factor affecting buying power. If all states are operating at or above capacity, their choices are limited, and the high demand translates to higher prices for private prisons. In terms of buying prison services, the state, after all, can always provide the services itself or possibly contract with other states or county jails. Moreover, a few buyers account for a substantial percentage of the private companies' revenues. For example, California alone accounted for 13 percent of CCA's 2010 revenue and three federal agencies provided an additional 43 percent. Four government buyers accounted for 60 percent of GEO Group's revenues (Culp, 2011). Such significant government buying power (oligopsony) can be used to obtain low prices and good quality service from private contractors.

At the same time, the government buying power subjects the contract prison companies that own their facilities to substantial risk. The contract prisons have no immediate alternative use, and therefore their dependence on a few government customers makes them quite risky and often vulnerable to pressures to lower their prices. Indicative of this are the follow-up negotiations after a contractor is selected in the bidding. Risk emanates from a possible decline in the number of inmates, a shift to self-incarceration by the state, or simply an increase in the supply of cells by competitors.

The structure of the prison industry requires that the private firms must keep prices low to attract and maintain business. It is an industry with considerable risk, as well as a history of mergers, which is probably indicative of the existence of economies of scale. It also has the continued possibility of new entry. Moreover, firms' exit from the industry suggests substantial competition. For example, four

companies exited the industry between 1996 and 2011 (Culp, 2011). The contract prison segment must also face the possibility that states could send inmates to other states or use county jails. Another indication of the competitiveness of the industry is the shifting of contracts among the companies. For example, GEO Group, which had operated the Moore Haven and Graceville prisons in Florida, lost the contracts in 2010 when CCA was awarded the contracts to operate the facilities as a result of rebidding (*CCA of Tennessee vs. [Florida] Department of Management Services*, 2013, p. 8). Competition is thus far more intense than the number of firms and concentration within the private segment indicates.

Impact of a “small firm”: Small firms often disrupt the quiet life of a monopolist or a highly concentrated oligopoly (an industry with only a few firms). Their impact can be seen in many divergent types of industries and is often far greater than their small share of the involved markets. The private or contract prison segment collectively can be considered such a “small firm.”

In transparent tape, LePage, a small firm with about 10 percent of the market, challenged the monopoly of 3M's Scotch Brand Tape in the 1990s. LePage introduced and promoted private-label transparent tape to large buyers like K-Mart and Sam's Club. Such large buyers could put their own label on the tape, which was sold at prices below Scotch brand. The entry of LePage thus provided clear competition benefits. And 3M responded to the competitor's threat by bundling rebates for six products including transparent tape, which led to a substantial antitrust victory for LePage.

Another example of the important competitive benefits provided by a small firm comes from the physicians' services industry. There, osteopathic medicine (D.O.s) physicians, who are fully licensed and are not under the control of doctors of medicine (M.D.s), comprise about 6 percent of all physicians. D.O.s emphasized general or family practice, while M.D.s most often chose to practice specialties. D.O.s also frequently practice in urban and rural areas that are short of physicians. Most significantly, between 1980 and 2000, when M.D.s were concerned about

an impending physician surplus and maintained their output of new professionals at about 17,000 per year, D.O.s increased the number of their medical schools and more than doubled their graduates. By 2000, M.D.s recognized that a shortage of providers existed (Blackstone, 2003). Had the D.O.s not expanded their numbers, the shortage would have been far worse. In this case and many others, having even a small competitor in an otherwise monopolistic situation can be most helpful.

In the 1980s, a small firm had a major impact in the cigarette industry. The firm Liggett had a market share of only 2.3 percent in the highly concentrated cigarette industry, where the top four had 88 percent of the industry sales. During the previous forty years, no major company sold any non-branded cigarette, and virtually all cigarettes were sold at the identical full list price. Liggett was under severe financial pressure, producing too few cigarettes to take advantage of economies of scale, which required 3 to 5 percent of industry output. The firm, in 1980, introduced generic cigarettes, which were then sold at discount prices by mass-market retailers. Other firms followed by introducing their own generics, whose share grew. A 1997 Federal Trade Commission (FTC) staff report on the industry noted: “This makes Liggett one of the most significant constraints on higher industry prices today” (Burnett, 1999, p. 262).

The soft drink or carbonated beverage industry, which Coca-Cola and Pepsi Cola have long dominated, also points out the desirability of small competitors. Both large firms have colas (and other flavored carbonated beverages) that have enjoyed a combined market share of almost 70 percent. However, neither major company produced a caffeine-free cola until 7-UP, a company with a small market share of approximately 7 percent, introduced and heavily promoted Like Cola in 1982. Then 7-UP also introduced a diet version of its caffeine-free cola. Soon, Coca-Cola and Pepsi Cola introduced their own caffeine-free colas, and Like Cola disappeared from the market. Incidentally, another small firm, Royal Crown (RC), had introduced its own caffeine-free cola in 1980. Again, the small firm is often a maverick introducing important competition into the market.

The cereals industry also illustrates the role of small firms that serve as mavericks. The cereals industry was long dominated by a few companies. In the 1970s, the top four had 85 percent of the market, and the top six had 95 percent. These entrenched companies did not respond to the increase in consumer demand for “healthy” food, including natural cereals. In the early 1970s, companies like Colgate, International Multifoods, Pet, and Pillsbury introduced natural cereals, which products were soon responded to by the leading companies. The share of natural foods increased from about 0.5 percent in 1972 to about 10 percent in 1974. All mavericks except for Pet soon exited the market (Schmalensee, 1978). Again, the role of small firms is often to do what entrenched and established firms fail to do.

The conclusion is that small, maverick firms can have an important competitive impact, eroding and constraining monopoly power. As these diverse examples show, even a firm with a small market share can and often does have that impact. Indeed, the U.S. Merger Guidelines reflect the understanding that such a maverick can be an important competitive force, and its elimination through merger can substantially lessen competition (Baker, 2002, p. 140). The impact of rivalry from a small firm is likely to have at least as great an impact on government monopolies as on private monopolies or concentrated oligopolies. After all, government lacks the profit incentive to innovate and is also encumbered by bureaucratic and other regulatory requirements.

Additional insights on market structure: One of the arguments against the use of contract prisons is that of supplier power. Suppose that a state suffers from significant overcrowding and depends upon the one prison company located within its borders. The prison company can use its market power and significantly raise its prices. Alternatively, suppose that the number of inmates within the state drops sharply, which may indeed occur (Section 14). Contract prisons will then own expensive facilities with no other use. Such possible conditions may indeed occur for a short period of time and could cause severe difficulties and financial losses to either or both public and private sectors.

While these scenarios are possible, they could happen in any industry; it is not unique to correc-

tions. Also, one must recognize the power of competition and the dynamics it creates to correct for such inevitable situations. A local contract prison company needs to maintain a good business relationship with the state and is unlikely to use its temporary market power to raise prices. Furthermore, the state DOC could always contract out inmates to other states, to other companies, or with county jails. Thus, even a monopoly contract prison within a state has limited, if any, power over the price.

If a local contract prison is suffering from oversupply of cells, then it could attract inmates from other states by lowering prices for its facility. In the short run, prices could be reduced to the marginal cost of additional inmates. It is important that state legislators and the courts allow easy transfer of inmates among states, which increases competition and thus improves efficiency, lowers prices, and improves the quality of service for inmates and the states. State prisons could be allowed to both send inmates to other states or private prisons and, if possible, house inmates from other states. Information on varying market conditions and opportunities could appear in a comprehensive database that corrections officials could access.

Since significant investment may be required, especially in cases where facility construction is involved, long-term contracts for private contractors are generally necessary. The more states that participate in this market, including both public and private prisons, the more efficient prisons will be and the more prisoners' conditions will improve. As a demonstration of what happens when competition is curtailed, legislators in California passed a law barring private prisons within the state, creating many challenges in addressing the state's prison overcrowding. Any such legislation that prevents private competition within a state or impedes interstate transfer of inmates is inefficient and exacerbates severe overcrowding which adversely affects inmates and correctional staff. Incidentally, in 2013 California allowed use of in-state private prisons for low security inmates with the stipulation that workers have to be state employees.

The effects of increased competition on the prison industry can also imply changes to government oversight

and regulation. For most industries, if firm entry occurs and competition increases, government intervention to protect consumers' interests becomes unnecessary. For example, in the competitive markets of the clothing or toy industries, customers "decide" what products are preferred, and producers that cannot deliver a quality product at the right price suffer. Thus, no government intervention is needed, and markets operate efficiently. At the same time, consumers are not familiar with the chemical contents of the clothes and toys, and usually no business entity has the incentive to conduct the necessary tests for all such products and make public their findings. Government is the only entity that would protect customers and conduct comprehensive tests on contents of both domestically produced and imported products. By contrast, the inmates are the consumer-equivalent in the prison industry. They have no power to choose the facility where they are sent and are not able to review information on the performance of the prison. Thus, even if strong competition among private and public prisons exists, government oversight on performance is necessary for both the public and private prison systems.

To conclude, in this section we saw that the prison industry as a whole has become more competitive since the reemergence of contract prisons in the 1980s. In Sections 5 through 13, we shall compute state costs versus the prices paid for contract prisons. Our calculations reflect all real costs, regardless of when they were incurred, rather than just annual out of pocket costs. We further suggested the possibility that even greater competition could yield greater savings. The entry of the competitive contract firm to a state's prison industry could not only provide cheaper services for its DOC but also may force state prisons to improve their service delivery. In the discussion that follows, we shall analyze whether states that face competition by private contractors are more efficient than states that rely merely on state prisons.

4 | A Model for Estimating the State's Avoidable Costs

This study asks whether contracting out prisoners or prisons reduces a state's costs and is beneficial to

the welfare of its citizens. Cost savings are usually required in order for the state to contract out inmates. When the nonmonetary performance of prisons is incorporated into the analysis, it becomes more comprehensive, reflecting overall net benefits to the state's citizens. The cost savings are all expressed in monetary terms. However, the performance will be captured in more general terms since quantifiable data are sometimes not available. This study relies on government sources for all data. We imputed data, again relying on government sources, when direct data were missing. Appendix 1, the source appendix, provides information about where the data were obtained for each of the variables (entries) in Table Appendix 3.1.

The basis for a state's decision to contract out the management of existing prisons or transfer inmates to private prisons should be based on budgetary savings while at least maintaining the same performance. Budgetary savings should reflect avoidable costs to the state. In the determination of avoidable costs, we distinguish between the short-run costs, or operating costs, and the long-run costs, which include operating costs plus capital costs.

There are three scenarios for the use of contract prisons. In the first scenario, the facility is owned or financed by the state government, so that the avoidable costs are merely those that occur in the short run—the operating costs—which is the situation in Ohio (except in the case where the facility was sold to the private contractor by the state) and Tennessee. The second scenario occurs when the facility is privately owned or financed, and the avoidable costs include both the operating and capital costs. This includes cases of overcrowded facilities, facilities built under BOT, or privately built prisons. Examples of this scenario include California and Oklahoma. The third scenario occurs when a state facility is sold to a private operating company, as in Ohio, and thus both operating and capital costs are included. It is similar in concept to the second scenario. In all three cases, the state regulates and monitors the operation of the contract prisons. The following Glossary of Terms provides a brief description for the categories of costs. Appendix 2 provides a complete list of cost items included in each of the three scenarios.

Glossary of Terms

TERM	DEFINITION	EXAMPLES
Avoidable Costs	Savings for the state emanating from the use of private contractor. The cost items included depend upon the reason for the use of the contractor.	See Appendix 2 for the types of costs considered avoidable for each scenario.
Direct Costs	Costs directly associated with the handling of inmates. These costs are zero when no inmates are in custody. Usually defined as part of the short-run costs.	Labor, medical, utilities, employee pensions, food
Indirect Costs	Costs that incur to other branches of DOCs and other state agencies, which are linked to inmate and state prison operation.	Central administrative functions like classification and assignment of inmates, adjudicating inmate grievances, parole hearings, inmate transfers, liability insurance, human resources
Short-Run Costs	Costs incurred as a result of the day-to-day operation of a correctional facility including both direct and indirect costs.	See examples above
Long-Run Costs	Short-run operating costs plus capital costs associated with the financing, planning, and construction of the facility or significantly large reconstruction or rehabilitation.	Short-run costs plus depreciation of facilities, interest on debt, significant repairs

Economists assume efficient use of freed-up resources even if the state chooses to under-employ such resources. For example, if inmates are transferred to a private prison and, as a result, a manager becomes idle, his or her salary is then an avoidable cost. We assume that the manager ceases duties in his or her obsolete position. We assume that the DOCs are efficient in their use of resources.

Also, in the calculation of avoidable costs, we distinguish between contracting out a prison (i.e., managed-only facilities) and the transfer of inmates to private prisons. In the first case, a private company takes over the management of a prison for some years and then the prison returns to the DOC. In such cases, the avoidable costs include all the direct costs plus the indirect costs to the DOC and other state agencies. Recovery of capital outlays and interest payments are not avoidable if the public sector bears the renovations

and rebuild of the old prison or the construction of a new prison. The issue of indirect costs will be considered below.

There are several reasons states may choose to use contract prisons, and overcrowding is one major driver. Sometimes a court order or even a threat of such an order leads to the practice. For example, an appellate court found that California in 2008 was operating at 188 percent of its designed capacity, jeopardizing the health and safety of the inmates. In fact, the U.S. Supreme Court in *Brown v. Plata* (2011) determined that California was operating around 200 percent of designed capacity for at least 11 years. California has been ordered to reduce its capacity utilization to 137.5 percent by February 2014. California also lost control of the healthcare delivery in its prisons to a federal receiver after it was determined that the state was not delivering a constitutional level of inmate medical

care because of the severe overcrowding in its prisons. Excessive overcrowding exists elsewhere, as well. Ohio, for example, in 2012 had prisons operating 31 percent above their capacity (Diroll, 2011).

When overcrowding exists, costs may appear lower as a result of lower performance. Overcrowding spreads at least the fixed costs over a larger number of prisoners, lowering costs per inmate. However, overcrowding significantly reduces prison performance, including creating greater security problems, lowering correctional officer and inmate safety, increasing violence among inmates, and consequently requiring long lockdowns. Overcrowding also reduces the space available for education, training, and recreational programs. This is likely to hinder the reentry of inmates to civil society.

Another driver for using contract prisons is when a state owns old, outdated facilities that require significant and often unavailable resources for renovations. In these conditions, prisoners are likely to sue the states for cruel or unusual punishment. For example, in Texas, a prison built in 1856 is still being used. States can fund the construction of new prisons or modernize existing prisons by issuing general obligation or revenue bonds. However, the state constitution usually limits the extent of borrowing general fund dollars for capital projects. For example, the state of Washington limits the debt service to 9 percent of general state revenues for the previous three years (State of Washington, 2012). Further, our examination found that Arizona has a constitutional cap on general fund bonds of \$325,000. Other states require voter approval for issuing of bonds. These constraints gear states to create public-private partnerships where the capital outlays of new or renovated prisons and other infrastructure are privately financed.

When the state does not have to bear necessary capital costs, the avoidable costs to the state include both short- and long-run costs. The short-run costs are direct and indirect costs. The long-run costs include capital costs, which involve modernization, significant repairs, depreciation, and financing costs. Depreciation incorporates the decline in the value of the facilities, while modernization and repair include renewed and improved conditions. For example, the

Legislative Budget Board of Texas recognized that in the case of overcrowding, state avoidable costs must include the long-run costs related to new construction when calculating the per-diem charge (Gaes et al., 2004: 87–88). Clearly, when the state saves resources by contracting out the operation of a facility, more can be spent on other priorities. Because there can be a limited ability to issue bonds, when private contractors finance facilities, the state is able to borrow more for other public infrastructure needs and save on interest payments.

When inmates are transferred to contractor-operated prisons due to overcrowding or governmental capital shortages, the avoidable costs also include long-run costs. In fact, the courts are likely to intervene and require the state to correct overcrowding, which reflects housing inmates in unsuitable conditions. These unsuitable conditions translate to poor performance. Thus, both situations are unsustainable in the long term.

Appropriate measurement of avoidable costs will include the following categories of annual spending for each state on minimum- and medium-security male prisons, which are the most common alternative to private prisons. We have analyzed the professional literature to construct a comprehensive list of all avoidable costs. We considered in particular the work of Nelson (2005).

5 | Direct Avoidable Costs for Public Prisons

Personnel services (Table Appendix 3.1, rows 1a and 1b) include wages, salaries, and benefits for all prison employees. Benefits include health insurance, funded and unfunded pensions, and paid days off. When we analyzed personnel services, we recognized that some of the pension and retiree healthcare costs of the current personnel are paid by other state departments or are not paid in full. The Vera report (2012) provided data gathered from forty states, which we used to supplement reported personnel costs. The underfunded pensions and healthcare costs of correctional personnel are short-run costs that were not included in the financial reports of the DOCs, which were used to calculate the state costs versus private fees (Table Appendix 3.1, rows 15a and

15b). These underfunded personnel costs amounted to \$4.3 billion out of the total unaccounted costs of \$5.4 billion or 78 percent. The other unaccounted costs are capital and some inmate medical expenses.

Also unaccounted for are indirect costs, which appear for individual states but were not aggregated by Vera. More important is the fact that the unaccounted costs, even without the avoidable indirect costs, which were not aggregated by Vera, are 12.7 percent of the total correctional budgets. The unaccounted costs are not considered by the states in their comparison of the avoidable state correctional costs and private fees. However, these costs are appropriately included at the time they may occur, even though the actual outlays take place at a future date. Much of the critique on contracting out prisons rests on inadequate savings by the state government. However, the inclusion of these unaccounted costs and the consideration of the more relevant long-run costs make the comparison more accurate. Accordingly, Table Appendix 3.1 includes the underfunded pensions and retiree healthcare benefits as real costs of public prisons. Vera provided these data for all the states we analyzed except Mississippi.

The underfunded information for Mississippi is available in another source (Pew, 2010) however, though not specifically for corrections employees. We maintained our conservative approach and excluded the underfunded amounts for Mississippi, since no concrete data are available.

The Pew study (2010 and 2012) stressed the significant amounts of underfunded retiree pensions and healthcare for the states. In 2010, a \$1.38 trillion gap existed; \$757 billion for pension promises and \$627 billion for retiree healthcare, an increase of 9 percent from just 2009. In 2008, one-third of total obligations were unfunded. Noteworthy, of the states we analyzed Oklahoma and Kentucky had more than one-third of their liabilities unfunded, and Mississippi had more than 20 percent. On the other hand, Florida was one of only four states that were fully funded.

In terms of correctional medical care, the responsibility for services differs among the states. In general, off-site medical costs often include ceilings to safeguard the contractor from unanticipated medical

expenditures. On-site medical costs are normally the responsibility of the contractor, and the public-private partnership facilities often have physicians, nurses, and other medical personnel to provide care, which is included in the per-diem rate. For example, in Mississippi, private contractors cover the first seventy-two hours of care for inmates receiving treatment in outpatient facilities and, beyond that, medical care is the state's responsibility. In Oklahoma, the contractor is responsible for all medical costs per inmate under \$100,000 with a \$50,000 limit per episode. When we compare state costs and private fees, they should both reflect the appropriate medical expenses. However, comparisons across states are more difficult because of different practices (Table Appendix 3.1, rows 2a and 2b).

Maine provided full details on its public prison expenses for food, utilities, fuel, office supplies, technology, rent, clothing of inmates, and minor repairs. However, for the other states we were able to obtain just an aggregate of such expenses. Contracted professional services include teachers, psychologists, and others. The inclusion of Maine in this study provides a benchmark for public managed prisons, as well as an example of a state that currently lacks private competition.

6 | Indirect Avoidable Costs for Public Prisons

This category includes some of the central administrative functions that become avoidable when private prisons are used. Examples for such costs that become moot when contract prisons are used and should be incorporated in the calculation of the state cost per inmate per day include adjudicating some inmate grievances, liability insurance, human resources (background check of potential employees and hiring, training, and administering employee records), legal (shared between the DOC and the attorney general), and transfers of inmates among public prisons. These hierarchical and intergovernmental costs are often ignored when the DOC calculates its own costs per inmate per day. Contracting out inmates allows savings that could be directed to other activ-

ities. Gaes et al. (2004: 95–96), argue that based on existing economic literature, if the state refers a small number of prisoners to private prisons, then there is no significant decline in these indirect avoidable costs. They add that even when prison services are contracted out, some of the overhead costs continue to burden the public sector (p. 98). For example, the state normally maintains control over classification, disciplinary, and other central office activities. Tennessee and Oklahoma calculated that when prisoners are transferred to contract prisons, approximately 75 percent of the indirect costs remain as state costs or 25 percent become avoidable costs (MGT of America, 2007; Tennessee General Assembly, 2010). In the discussion on savings below, we shall maintain our conservative approach and incorporate only 25 percent of the indirect costs as indirect avoidable costs.

Moreover, indirect costs are difficult to measure and may not be fully accounted for by some states. The Government Accountability Office (US GAO, 2012: 17) figure for indirect costs is 11 percent of operating costs or calculated as \$8.09 for low security federal prisons in 2011. The 11 percent serves as a standard for indirect costs. In fact, the reported range for most states was \$3.72 to \$6.64. Texas' indirect costs of \$1.30 seem far too low, and, to a lesser extent, this applies to Mississippi's \$2.96. The states that reported most comprehensively approximated the 11 percent of the GAO. We normally incorporated the reported figures for states that provided them, and 11 percent for the states that did not provide the indirect costs including Mississippi and Texas, which were unpredictably low. Vera provided some data on unaccounted indirect costs which we also incorporated. Unfortunately, Vera did not report for ten states including Mississippi, which may explain its reported low indirect costs.

7 | Monitoring Costs

Monitoring costs include contract development and procurement costs and contract compliance monitoring costs of the contractor-operated prisons by the relevant DOC. These costs are normally included in the per-diem charge of the private contract price. If

not, they are added to the per-diem charge. In Ohio, the private contractors must reimburse the Ohio Department of Rehabilitation and Corrections (ODRC) for two monitors at their expense. In Kentucky for fiscal year 2009, the monitoring costs were \$105,362 for 1,234 prisoners or \$0.23 per inmate per day, a negligible amount that will not change the results even if added as an estimate for all the states. In Florida from 2009 to 2010, the annual monitoring costs for each contractor-operated prison ranged from \$54,000 to \$72,000, or \$0.08 to \$0.10 per inmate per day. In Florida and Ohio, the on-site monitoring costs are very small and are indeed included in the per-diem prices paid to the contractor.

8 | Capital and Finance Costs

Capital and finance costs should be included for all states that house inmates in private prisons to handle overcrowding or to avoid rebuilding or substantial maintenance costs. There are, after all, in excess of 290,000 prison beds in public facilities that are more than fifty years old (U.S. BJS, 2005). The necessity to include the capital costs as avoidable costs for the public sector is recognized by the state of California's legislative research agency, which stated: "Many CDCR prisons are more than thirty years old. While still operational, many of these prisons require much greater levels of maintenance and some will require significant renovations. Long-term maintenance and renovations costs should be taken into consideration when identifying prisons to close" (California Legislative Analyst's Office, 2012B, p. 16).

These costs should not be considered when a private company manages an existing public prison. The depreciation should be calculated for the period between major renovations. A prison, like a standard building, is assumed to be fully depreciated over a period of fifty years. In fact, a prison encounters both more wear and tear and requires more modernization, including incorporation of new technology, than a normal building. Even though prisons would be expected to require major renovations and upgrading periodically, we utilize the fifty years' depreciation life as

does the U.S. Bureau of Prisons (BOP). The exception is Arizona where its legislative research unit used twenty years (JLBC, 2012). Since capital outlays are funded normally through the issuance of bonds, the annual interest payments should be incorporated in the calculation of public prison costs. The reason for Arizona's twenty-year amortization is because contract prisons are transferred to state ownership after twenty years.

The US GAO (2012:13) concluded that the capital costs, including modernization and repair projects and depreciation, for the fiscal years 2009 through 2011 ranged from \$4.39 to \$4.82 per inmate per day. These were the fees the states paid the BOP when state prisoners were housed in federal institutions. In our calculations of the costs for state prisons, we used the average of \$4.61. Firms utilize numerous methods of depreciation for taxation purposes, but for a state such consideration is irrelevant. However, the real decline in capital assets or economic depreciation is important to include in the evaluation of whether to use contract prisons or build a state prison. Depreciation is an avoidable cost when a contract prison is used. It reflects the consumption of the facility through its use and is real like any other direct or indirect cost item. Failure to include depreciation, like some states do in their calculation of state per inmate per day costs, is unjustified and biases significantly downward the public costs. Clearly, however, depreciation should be included only when the long-run costs are considered.

It is important to note that states issue bonds to finance prison construction, and the cost of principal and interest per inmate is a long-run variable cost to be imputed to obtain the avoidable inmate cost per day. The correct measure should be the current construction cost of a new prison, which would reflect avoidable costs. Then, the interest on such capital costs must be used to calculate the interest per inmate per day. We chose the average interest rate for 2012 of 3.75 percent for a twenty-year maturity bond. This is a conservative rate, which was especially low in 2012 (see, W M Financial Strategies (2014). Our research shows that construction cost for a 1,500-bed medium security prison in 2012 was \$225 million (see, Brown, 2011). Thus, the annualized interest cost per inmate per day over a twenty-year life of the bond is \$15.41.

Another calculation of interest costs comes from a 2007 study for the Oklahoma Legislature (MGT, 2007). The study estimated construction costs of \$54,500,510 for a 660-bed maximum-security facility expansion. This yielded annual principle and interest costs of \$15.37 per inmate per day for a twenty-five-year bond. This figure is essentially identical to our calculated principle and interest cost.

However, even if we use the 2011 sale price of the then eleven-year-old, 1,798-bed Lake Erie Correctional Institution in Ohio of \$72.77 million, the annualized interest per inmate per day would be \$4.16. We used the Construction Cost Index for buildings, utilities, and grounds of the U.S. Army Corps of Engineers (2011). The cost of construction increased by 57.9 percent since 2000, so that the 2011 cost would be \$115 million or the interest cost would be \$6.57 per inmate per day.

A problem arises because in recent years public prison construction was rare in the examined states. Thus, we used interest payments, when available, as reported by the individual states. As discussed above, the measure of \$6.57 drawn from Ohio could be used.

Vera (2012) reported prison interest costs that should be attributed to correctional facilities rather than be part of other state budgets. The appropriate measure would be the current per inmate interest cost for the construction of a facility. Unfortunately, the Vera data refer to interest payments for prisons that might have been built long ago and do not reflect current costs. Also, the capital costs should correspond to the same number of inmates as in the relevant size prison. Since we divide by the total number of inmates, our measure of interest payment is understated. In maintaining our conservative approach, we chose to use Vera's capital cost when the states do not report their own cost.

Florida built a new public prison in 2009, and the annual interest per inmate per day was \$7.05. However, in the case of Florida where private vendors operate the existing public prisons, only the short-term costs are relevant. The other states showed lower costs. Except for Florida, imputed costs of interest were lower for all other examined states than the \$6.57 updated interest costs. Maintaining our conservative approach, we used Vera or the state data for all examined states except California for which interest

data from Vera were missing. Including the \$6.57 for California would increase the long-run 2007–2008 savings from contracting out from 32.20 to 35.79 percent. However, we chose to be even more conservative by not including any interest costs for California.

9 | Capital Flexibility Gained by Use of Contractor-Operated Prisons

Use of private prisons increases the flexibility of government corrections in a variety of ways. First, demand for prison cells changes over time. When demand is high, public prisons lack cells, and overcrowding results. The courts can require timely alleviation of overcrowding in such cases as California in 2013. In the absence of contract prisons, states need to build expensive new facilities while their borrowing capacity is low. On the other hand, the number of inmates is expected to diminish for such reasons as the declining cohort of young males, reduction in the use of “three strikes” sentencing, easing of drug laws as already occurred in the states of Washington and Colorado, and a possible reduction in recidivism. Prisons could then become under-occupied or even vacant, and it is difficult and expensive to transform them for other uses. Further, much of the expensive surveillance features will have to be abandoned.

For example, Florida, Texas, New York, and Michigan have seen a decline in the number of prisoners and have already closed prisons. The only two states experiencing a significant increase in prisoners in 2011 were Kentucky and Tennessee, leading to an increase in the use of private prisons. However, the trend changed between 2011 and 2013, causing the closure of thirty-five adult state correctional facilities in fifteen states (Strumpf, 2013). Thus, contract prisons play the role of an equilibrating mechanism for equating supply and demand for cells. Regardless of the successful partnership between Kentucky’s DOC and CCA, with the decline in the number of prisoners, private prisons closed when public prisons had sufficient cells. The same phenomenon of reduced reliance on private prisons occurred in Texas in 2013, which has even closed one state prison. This flexibility translates into large savings for

state governments. When overcrowding occurs, the state saves by using private prisons instead of building new prisons that have little or no alternative use in periods of decline in the number of prisoners.

These significant savings for state governments are not accounted for in our calculations of inmate per-diem costs, even though they should be considered state avoidable costs. This is again an indication of our conservative approach where avoidable costs are downward biased when savings exist but cannot be comfortably estimated.

Private prison construction yields savings in both time and costs compared to state governments contracting out the construction. Cumbersome procedures in obtaining bids and selecting the winning contractor, possible rules for the use of unionized labor, and the inability to take advantage of buying power make the cost higher and often hinder timely completion. A private contractor built a 3,000-bed medium-security prison for California in Arizona and began housing its first inmate just fifteen months after beginning construction. Because of the regulatory requirements in California, that process would have taken much longer. These issues are discussed more fully in the individual state section (see Section 12).

We do face here the typical peak load problem similar to the case of electricity. When a state faces excess demand for prison cells, then the private prison industry relieves the pressure by saving the public sector the full construction costs of building new facilities. In the electricity industry, excess demand in one region is usually satisfied by purchasing electricity from other utilities that are experiencing excess capacity. The price reflects long-run costs. The same principle should apply to the prison industry.

10 | Non-Cost Performance Measures

Our discussion so far has concentrated on the comparison of public costs and the fees paid for private prisons. Obviously, dimensions of quality should also be considered. To that end, there are some suggestions that the private facilities are performing at least equal to public correctional facilities.

A robust and useful practical indicator of quality in the operations and management of prisons is accreditation by the American Correctional Association (ACA). ACA accreditation allows for a standardized quality measure, and the standards themselves are established and continually revised by a committee within the organization. Generally, public-private partnership prisons must obtain and maintain accreditation by the ACA. This accreditation is often required of private prisons as part of their contracts. In 2002, there were a total of 5,000 detention facilities in the United States, of which 532 were accredited. Of the 532, 465 were public and 67 were private. At most, 10 percent of government facilities were accredited, while 45 percent of private institutions were accredited (Segal and Moore, 2002, p. 12).

Contracts with private prisons also include performance measures to ensure quality performance is maintained, and monetary penalties are assessed for unsatisfactory performance. The contracts often require at least equal performance to that of the state facilities. An Ohio corrections official stated that their contracts include quantitative performance measures that ensure quality. Renewal of contracts is, of course, aided by good performance.

Private firms are often required by contract to provide measurable performance, a requirement that does not always apply for the public sector facilities. For example, in Florida, the Chamber of Commerce in 2012 provided data showing greater provision of education, training, and vocational services for inmates in private facilities (see section 12 on Florida below). This higher level of rehabilitation and intervention services can be seen in other states as well. For example, in Kentucky, the Legislative Research Commission stated in a 2009 report (p. 19): "All three contracted prisons offer more programming than the comparable state prisons. In particular, the state-operated Little Sandy Correctional Complex and the contracted Lee Adjustment Center have little programming in common except for work, GED, Narcotics Anonymous/Alcoholics Anonymous, and prerelease programs. The Lee Adjustment Center provides a number of vocational training opportunities not offered at Little Sandy."

Beyond the efforts to assure quality through accreditation and contracts, the existence of competition by private prisons constrains price increases of labor and improves efficiency in the use of labor. For example, the existence of the private option has changed staffing patterns in Oklahoma public prisons, which has led to useful consolidation of some case manager roles and improved food services. In Ohio, private correctional officers are trained with public officers at the same academy. Their staff meetings include both private and public wardens. This indicates identical training of officers and collaboration between the public and private institutions that could suggest similar levels of staff knowledge, orientation, and performance. This is, indeed, a practice that is highly likely to improve mutual learning and performance by both sectors.

11 | Unaccounted Cost and Benefits of Contract Prisons

Private prisons provide additional benefits to state governments besides providing savings from their operation. Perhaps most significantly, private prisons pay income and property taxes while state facilities do not. In Arizona, for example, the economic consulting firm of Elliot Pollack and Company (2010, p. 1) determined that one private contractor paid over \$26 million in taxes to the state and local governments in 2009 alone. Such state or local revenues could be used to reduce taxes or to finance other government functions. These taxes could increase the state income and employment by the familiar multiplier effect. We did not quantify such benefits, but their existence should be recognized.

Overcrowding diminishes both the short- and long-run inmate per day monetary costs. When prisons are operated over capacity, additional inmates added to the facility are significantly less expensive to house than in a facility that is operating at or below capacity. This is because in an overcrowded prison the fixed costs associated with the operation have already been accounted for. Therefore, the marginal cost of housing each additional inmate does not include

any “overhead” costs. As prisons become more overcrowded, the lower marginal cost of each additional inmate drives down the facility per inmate average cost. Because state-run prisons are much more likely to operate under overcrowded conditions (for example, California), the average “per inmate cost” is understated compared to private facilities operated at or even below capacity. While this is a highly significant factor in comparing costs, we have not accounted for this difference in our analysis.

In spite of achieved cost savings from overcrowding, research has shown the quality of service and the level of security are substantially reduced. In the case of California, the courts have concluded that security problems and deficient medical care resulting from overcrowding led to unwarranted deaths and suffering of the inmate population. In addition to jeopardizing inmate and staff safety, the remedies mandated by the courts far outstrip the perceived savings achieved from operating overcrowded prisons. See the discussion of judicial decision in the case of California in the next section. Further, cost comparisons would tend to be biased against private facilities if their utilization rates were lower than public facilities.

Private prisons are monitored by state DOCs. In some states, contract prisons are monitored by on-site inspectors, while in other states inspectors monitor randomly during the week. In any event, this is more rigorous quality control than the monitoring of state prisons. Also, managers and employees in private prisons do not enjoy sovereign immunity like public prison officials, encouraging private personnel to be more cautious in dealing with inmates. Finally, unlike public prisons, private prisons bear all liabilities, including fines and damage payments. Hence, the private sector has a greater incentive for good performance, which is largely unaccounted for in this study.

Evaluation of private versus public prisons requires consideration of legal issues and their cost implications, as well. In private correctional facilities, disciplinary actions require involvement of the aforementioned state monitors, while this may not necessarily be the case in similar public facilities. Wardens in public facilities have greater autonomy to handle these claims, as they do not generally have

staff that serves in these oversight functions. This oversight (or lack thereof) has legal cost implications. As mentioned above, private correctional officers lack sovereign immunity, which means they are more vulnerable to litigation.

While the lack of sovereign immunity could be argued to reduce the willingness of officers to pursue escapees beyond the private facility (Sanders, 2012), in practice, both private and public correctional facilities normally request law enforcement involvement during such incidents. Furthermore, private companies are often required by contract to involve law enforcement agencies. In fact, this use of law enforcement and planned collaboration must be laid out clearly by private contractors not only in their contracts but also in the emergency plans required for the initial requests for proposal.

Further encouraging good performance of private contractors is the fact that the contract usually requires indemnifying the state for any malfeasance. On the other hand, the U.S. Supreme Court held that private correctional officers are less vulnerable for violating the Eighth Amendment to the U.S. Constitution against cruel and unusual punishment. In the case of private prisons, inmates charging violations must first exhaust any state remedies before claiming constitutional protections (see *Minneeci v. Pollard*, 565 U.S. ___, 132 S. Ct. 187 (2012)).

12 | A General Discussion of Individual State Costs and Performance

Thirty of the fifty states used private prisons in 2010. The extent of usage varies from New Mexico’s 43.6 percent of inmates confined in contract prisons to South Dakota at 0.1 percent. Overall, 6.8 percent of all state inmates were in contractor-operated prisons. The states that generally have a large number of private inmates were all in the south. The leading states in their overall number of private prisoners were Texas and Florida. After those two states, those with the highest number of privately held prisoners in descending order were Oklahoma, Arizona, Mississippi, Georgia, and Tennessee. These seven states accounted

for 49 percent of all state-held prisoners in private facilities (U.S. BJS, 2011; Gilroy and Kenny, 2011).

In this study, we analyzed in detail six of the seven states, as well as California, which experienced a recent significant increase, and Ohio, which sold a large prison to a private contractor. A lack of available data prevented us from including Georgia. We incorporated Maine, which did not contract out for corrections services. However, it had good data for comparison of its state-operated prisons. The US GAO (2012) report on the costs of federal prisons was included in order to supplement for missing data. Maine and the federal report also provided necessary benchmarks and standards to appraise the state data.

Arizona

Arizona has employed contract prisons since 1986. State law requires that private providers deliver the same level of service at lower cost to the state or a superior level of service at essentially the same cost. Contracts with the Arizona DOC (ADOC) also require that the state take ownership of a prison financed by the private sector when the contract term expires, typically after twenty years, and at no cost to the state (Arizona State Legislature (2014) and Harris (2013).

Until a 2010 state cost report, public-private partnership prisons in Arizona were shown to achieve cost savings. The reasons why the 2010 report reached a surprising and, we believe, incorrect conclusion includes inadequately addressing depreciation and correctional officer retirement costs.

The ADOC used depreciation based on original prison cost. This is significant because this approach underestimates the actual cost of public prisons, which should be based on what it would cost in 2010 to finance and build a public prison. The Arizona Joint Legislative Budget Committee Staff (JLBC, 2012) did such an analysis and employed a twenty-year life. This yielded a state per-diem per-inmate cost of \$10.71 instead of the \$1.41 the ADOC reported. The \$10.71 also includes the interest payments for capital costs paid by the ADOC. However, the budget should still have included the \$0.04 interest that other state agencies incurred but Vera determined were attributable to corrections. The JLBC also found

that the state retirement system was underfunding its pension contributions by overestimating expected investment returns. This correction added \$2.67 per day per inmate to state costs.

Finally, medical costs were properly handled. The state provides all the required medical care at selected ADOC prisons, while private contractors have limits on the care they are required to provide as part of their contracts based on ADOC-requested RFP stipulations. Accordingly, the JLBC staff simply mimicked what the ADOC did and reduced state costs for medical services by \$10.08 and private contractors' by \$7.64.

ADOC did not report any short-run indirect costs. Instead of incorporating from the Vera report the unaccounted \$0.16 hierarchical costs, we included the 11 percent indirect costs calculated in the US GAO (2012) report. The range for such costs in our analyzed states is \$1.30 to \$8.09 with concentration in the \$5 to \$6 range. Taking into account that 75 percent of the indirect costs are not avoidable, the long-run savings would be 22.34 percent for the minimum-security prison and 14.25 percent for the medium-security prison. In the case of Arizona, which faces overcrowding conditions, the long-run savings are relevant.

California

California contracts with private providers to assist in housing its inmate population both in state through contracts with community correction facilities, as well as out of state to house approximately 9,000 medium-security inmates in prisons in Arizona, Oklahoma, and Mississippi. The utilization of public-private partnership prisons by California is done primarily to reduce severe overcrowding in state prisons but has the added benefit of providing significant operational savings to the state as well. We calculate that privatizing a portion of its inmate management has saved California approximately \$164 million a year. This is in addition to the billions of dollars that the state has saved by not financing construction costs to add additional prison capacity. As discussed below, the state has been able to utilize the flexibility that contract prisons provide to institute other policy measures to reduce overcrowding in its state prisons to help meet court mandates.

California experienced a substantial increase in its prison population during the 1990s and 2000s, going from 76,000 in the late 1980s to 171,000 in 2008 to 2009. This increase was so great that by 2008, the system was operating at 188 percent of its designed capacity, and it operated at almost double capacity for at least 11 years (*Brown v. Plata*, 2011, p. 1924). The designed capacity is considered to be one inmate per cell, with no inmates housed in gyms or day rooms.

The overcrowding in California prisons led to problems in delivering adequate healthcare. In April 2001, *Plata v. Brown* plaintiffs claimed in a class action suit that California provided such inadequate medical care that it violated the cruel and unusual punishment amendment to the U.S. Constitution (CALAO, 2012a). The court held that the system was “broken beyond repair” and that death and suffering had resulted. California in 2002 agreed to improve the healthcare situation. However, in 2006 the court held that insufficient progress had been made, determining that overcrowding led to security restrictions on inmate movements that prevented inmates from receiving appropriate and timely care. As a result, the court placed a federal receiver in control of inmate medical care, taking the state out of the management of the prison’s healthcare system. That receiver remains in place today.

In August 2009, a three-judge panel upheld the ruling and ordered that overcrowding be reduced to at most 137.5 percent of designed capacity within two years in order to provide adequate healthcare, a decision that was affirmed by the U.S. Supreme Court in May 2011. At that time, overcrowding and its related severe medical consequences persisted. The U.S. Supreme Court in its 2011 *Brown v. Plata* decision (p. 1927) noted that on average one inmate died needlessly every six to seven days because of the adverse consequences of overcrowding. The Supreme Court ordered that California reduce its prison population to the 137.5 percent figure by June 2013. This meant that the state had to reduce its inmate population by about 39,000 to comply with the ruling.

California responded by instituting a policy commonly referred to as “realignment,” which essentially shifted the responsibility of housing

inmates convicted of certain nonviolent crimes from the state prison system to county jails. Realignment, coupled with the continued utilization of contract prisons, has enabled the state to reduce its inmate population by approximately 37,000. However, in 2013, despite these reductions, the state was still operating its prison system at 150 percent of capacity. The U.S. Supreme Court in August 2013 upheld the lower court order to release by the end of December 2013 almost 10,000 inmates, which would finally reduce the number of inmates to 110,000 or 137.5 percent of designed capacity (Elias, 2013).

In 2010, the state housed 8,021 male inmates in five contracted facilities out of state (CALAO, 2010). The California State Auditor (2009) determined that the California Department of Corrections and Rehabilitation (CDCR) spent an average of between \$3,200 and \$7,800 less per inmate to house 2,226 inmates out of state than it would have spent in California prisons during 2007 to 2008. These savings refer just to the short-run operating costs, while the correct savings in the case of overcrowding, as discussed earlier, should relate to the long run and would be even higher. In any event, the Auditor noted the usual difficulty of determining comparable inmates. In 2013, California signed contracts with GEO and CCA to house over 3,000 low- and medium-security inmates in three private prisons within the state.

The issue of monitoring costs for out-of-state facilities is important. For example, the CALAO reported that the out-of-state program required seventy-three monitoring positions for five contract prisons. Given that other states have one or at most three monitors per prison, the figure of seventy-three is unusually high.

The CALAO reported that in 2011 California paid between \$61 and \$72 per day per inmate in out-of-state facilities. The relevant average cost for its in-state public prisons was \$104, or about 55 percent more than the price paid to the public-private partnership prisons.

While the state has been able to enjoy substantial savings by contracting with private providers, it has begun to look at replacing older and expensive facilities through new construction. In the 2012 legislative session, California authorized its Public

Works Board to sell \$810 million of revenue bonds to build 2,400 dorm beds at existing state prisons at a cost of \$337,500 per bed (California Public Works Board, 2012). Assuming a twenty-year amortization, as was the case in the Arizona example above, with an annual interest rate of 3.75 percent, the average annual interest rate for a municipal bond, principle and interest costs to the state equates to \$66.70 per inmate per day without any costs for operating the prison. The cost to house an inmate out of state in a private facility averages \$64.82.

Overcrowding has been costly to California. Medical care expenses doubled between 2007–2008 and 2011–2012, reaching \$43.95 per inmate per day. This compares to Maine's \$16.67, which was the next highest medical cost per inmate of the states we reviewed. All other examined states ranged between \$6 and \$11. The court order increased California's medical costs over that period by \$1.08 billion annually. The other high-cost item for California is personnel services, which are primarily security related. California's per diem for personnel services is \$67.01, which was second to Maine's \$79.25. Texas was third with \$40.92. Florida's was \$38.83, while personnel services for all other states examined ranged between \$20 and \$30. (Oklahoma showed high costs just for its maximum-security prison, which was not a major part of our analysis.) Noteworthy, both California and Maine, which exhibit high medical and personnel services costs, are the only states in our sample that lacked competing contract prisons within their borders.

Florida

Some states require private prisons to achieve specified savings to obtain and maintain their contracts while still satisfying performance standards. For example, under Florida law a contractor must promise and then achieve savings of at least seven percent over comparable public prisons. The Office of Program Policy Analysis and Government Accountability (OPPAGA) of the Florida Legislature conducted an analysis of four privately operated prison contracts and reported on April 20, 2010, that all four contracts achieved the required savings and recommended their consideration for renewal (OPPAGA, 2010a).

The privately operated Bay Correctional Facility had a per-diem cost of \$52.73 compared to the comparable public prisons of \$56.98 for savings of 7.5 percent during the two-year study period. The privately operated Moore Haven Correctional Facility had two-year savings of 12.5 percent, while the contract Graceville Correctional Facility had savings of 22.1 percent for the one year when a comparison could be made. Finally, the contract Gadsden Correctional Facility had two-year savings of 28.3 percent.

OPPAGA concluded that the contractors' performance in dimensions other than costs was acceptable. Performance criteria included such security requirements as key control, perimeter cameras, and filling vacant positions in a timely manner. Health services in particular were found to be well delivered. It is also noteworthy to point out that contractor-operated prisons provided more substance abuse and education programs, according to OPPAGA, than the comparable public prisons, so much so that costs had to be added to the public prisons for appropriate comparison.

OPPAGA also noted that a major reason for the cost advantage of private prisons is the higher retirement expenses for public prison employees than those provided by private contractors. Public correction officers have an amount equal to about 21 percent of their salaries contributed to a retirement fund, whereas private correctional officers receive matching contributions to their 401K funds of up to 5 percent of their salaries. Other reasons for the cost advantage of private prisons include higher costs for providing educational and substance abuse programs at public facilities and a higher allocation of administrative costs.

Florida's evaluation of private prisons has yielded some important evidence about performance. Specifically, OPPAGA's Information Brief Comparing Cost of Public and Private Prisons of March 1997 noted that per-diem public prisons costs rose less than 1.5 percent annually between financial years (FYs) 1992–1993 and 1995–1996. OPPAGA noted that competition induced by the privatization of some prisons might have produced greater efficiency in the public prison system (OPPAGA, 1997: 6). In a study of private prisons in Florida including a comparison of other state systems prepared for the Florida Department of